

Claims

1. Use of a hyperpolarised solid or solution of a high T1 agent comprising nuclei selected from the group consisting of  $^{19}\text{F}$ ,  $^6\text{Li}$ ,  $^{13}\text{C}$ ,  $^{15}\text{N}$ ,  $^{29}\text{Si}$ ,  $^{31}\text{P}$ ,  $^{77}\text{Se}$ ,  $^{111}\text{Cd}$ ,  $^{113}\text{Cd}$ ,  $^{115}\text{Sn}$ ,  $^{117}\text{Sn}$ ,  $^{119}\text{Sn}$ ,  $^{123}\text{Te}$ ,  $^{125}\text{Te}$ ,  $^{171}\text{Yb}$ ,  $^{195}\text{Pt}$ ,  $^{199}\text{Hg}$ ,  $^{203}\text{Tl}$ ,  $^{205}\text{Tl}$  and  $^{207}\text{Pb}$  and having a T1 value of at least 5 seconds at a field strength of 0.001-5 T and a temperature of 20-40 °C for the manufacture of a MR contrast medium for use in a method of diagnosis, surgery or therapy wherein an invasive device is inserted into a human or non human animal body and an MR image of at least a part of said body containing said device is generated to visualise said device.
2. Use as claimed in claim 1 wherein said high T1 agent comprises nuclei selected from the group consisting of  $^{13}\text{C}$ ,  $^{15}\text{N}$ ,  $^{19}\text{F}$ ,  $^{29}\text{Si}$  and  $^{31}\text{P}$  nuclei.
3. Use as claimed in claim 1 to 2 wherein said high T1 agent comprises nuclei selected from the group consisting of  $^{13}\text{C}$  and  $^{15}\text{N}$  nuclei.
4. Use as claimed in claims 1 to 3 wherein said high T1 agent has a T1 value of at least 10 seconds or more, preferably 30 seconds or more, more preferably 60 seconds or more and most preferably of more than 100 seconds at a field strength of 0.001-5 T and a temperature of 20-40 °C.
5. Use as claimed in any of claims 1 to 4 wherein the invasive device contains a cavity for holding the contrast medium, the cavity preferably fitted with an outside duct for facilitating circulation and addition of contrast medium.
6. Use as claimed in any of claims 1 to 5 wherein said invasive device is made from a medium conductive material containing carbon fibre.

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7. Use as claimed in any of the preceding claims wherein the invasive device is inserted into a tissue and/or vasculature of the human or non-human animal body.
8. Use as claimed in any of the preceding claims wherein the contrast medium additionally is a therapeutically active medium.
9. Use as claimed in claim 8 where the therapeutic active medium is instilled at the region of interest via the invasive device.
10. Use as claimed in any of the preceding claims wherein the method is a method of examining and optionally operating the fallopian tubes.
11. Use as claimed in any of claims 1 to 9 wherein the method is a method for diagnosis and optional surgery on tumours.
12. Use as claimed in any of claims 1 to 9 wherein the method is a method for diagnosis by biopsy, preferably breast or prostate biopsy.
13. Use as claimed in any of claims 1 to 8 wherein the method is an ablation procedure where an additional compound effective in this ablation procedure is introduced through the invasive device.
14. A method of facilitating the visualisation of an invasive device in a human or non-human animal body comprising inserting the invasive device into said body, generating an MR image of at least a part of said body containing said device and introducing a contrast medium into and optionally through said device during the time course of the visualisation procedure, characterised in that the contrast medium comprises a hyperpolarised solid or solution of a high T1 agent comprising nuclei selected from the group consisting of  $^{19}\text{F}$ ,  $^6\text{Li}$ ,  $^{13}\text{C}$ ,  $^{15}\text{N}$ ,  $^{29}\text{Si}$ ,  $^{31}\text{P}$ ,  $^{77}\text{Se}$ ,  $^{111}\text{Cd}$ ,  $^{113}\text{Cd}$ ,  $^{115}\text{Sn}$ ,  $^{117}\text{Sn}$ ,  $^{119}\text{Sn}$ ,  $^{123}\text{Te}$ ,  $^{125}\text{Te}$ ,  $^{171}\text{Yb}$ ,  $^{195}\text{Pt}$ ,  $^{199}\text{Hg}$ ,  $^{203}\text{Tl}$ ,  $^{205}\text{Tl}$  and  $^{207}\text{Pb}$  and having a T1 value of at least 5 seconds at a field strength of 0.001-5 T and at a temperature of 20-40 °C.

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15. Invasive device comprising a contrast medium comprising a hyperpolarised solid or solution of a high T1 agent comprising nuclei selected from the group consisting of  $^{19}\text{F}$ ,  $^6\text{Li}$ ,  $^{13}\text{C}$ ,  $^{15}\text{N}$ ,  $^{29}\text{Si}$ ,  $^{31}\text{P}$ ,  $^{77}\text{Se}$ ,  $^{111}\text{Cd}$ ,  $^{113}\text{Cd}$ ,  $^{115}\text{Sn}$ ,  $^{117}\text{Sn}$ ,  $^{119}\text{Sn}$ ,  $^{123}\text{Te}$ ,  $^{125}\text{Te}$ ,  $^{171}\text{Yb}$ ,  $^{195}\text{Pt}$ ,  $^{199}\text{Hg}$ ,  $^{203}\text{Tl}$ ,  $^{205}\text{Tl}$  and  $^{207}\text{Pb}$  and having a T1 value of at least 5 seconds at a field strength of 0.001-5 T and a temperature of 20-40 °C, wherein said invasive device comprises a hollow elongated body made from carbon fibre containing material.
16. Invasive device according to claim 15 characterised in that the hollow elongated body is opaque to radio frequency radiation.
17. Invasive device according to claim 15 characterised in that the hollow elongated body is made of carbon-fibre composite material
18. Invasive device comprising a contrast medium comprising a hyperpolarised solid or solution of a high T1 agent comprising nuclei selected from the group consisting of  $^{19}\text{F}$ ,  $^6\text{Li}$ ,  $^{13}\text{C}$ ,  $^{15}\text{N}$ ,  $^{29}\text{Si}$ ,  $^{31}\text{P}$ ,  $^{77}\text{Se}$ ,  $^{111}\text{Cd}$ ,  $^{113}\text{Cd}$ ,  $^{115}\text{Sn}$ ,  $^{117}\text{Sn}$ ,  $^{119}\text{Sn}$ ,  $^{123}\text{Te}$ ,  $^{125}\text{Te}$ ,  $^{171}\text{Yb}$ ,  $^{195}\text{Pt}$ ,  $^{199}\text{Hg}$ ,  $^{203}\text{Tl}$ ,  $^{205}\text{Tl}$  and  $^{207}\text{Pb}$  and having a T1 value of at least 5 seconds at a field strength of 0.001-5 T and a temperature of 20-40 °C, wherein said invasive device comprises a hollow elongated body with a first end and a second end, a first lumen extending from said first end to said second end and a second lumen extending from said first end to said second end, characterised in that said first lumen is in communication with said second lumen near to said second end.
19. Invasive device according to claim 18 characterised in that it comprises more than 2 lumens.
20. Invasive device according to claims 18 and 19 characterised in that the hollow elongated body is opaque to radio frequency radiation.

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